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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/773,664	02/02/2001	Takatoshi Yamashita	03327.2252	7053

22852 7590 05/07/2003

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EXAMINER

EL SHAMMAA, MARY A

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/773,664

Applicant(s)

YAMASHITA, TAKATOSHI

Examiner

Mary A. El-Shammaa

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02-02-01 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Arguments

Applicant's arguments filed February 26th, 2003 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

For the argument with reference to Maishev, the Applicant argues ... *Maishev merely discloses the observation that electrons held in cross electric and magnetic fields of such a magnitude at which the Larmor radius of an electron is approximately equal to an anode-cathode distance, whereas the Larmor radius of an ion significantly exceeds distance "d".*

Maishev et al. teaches of an ion source comprising a permanent magnet satisfying the relationship $L < 3.37B^{-1}\sqrt{(V_A)} \times 10^{-6}$ (Col. 6, Lines 40-43, 65-67 through Col. 7, Lines 1-9, Col. 13, Lines 16-18). According to the Applicant's specification, the expression $L < 3.37B^{-1}\sqrt{(V_A)} \times 10^{-6}$ can be written as $L < R$, where R is the Larmor radius (Page 6, Lines 7-9 of specification). Maishev et al. discloses in FIGS. 4a-4c an anode-cathode distance (d), between an anode (AN) and a cathode (IC, OC), wherein the Larmor radius (r_i) is significantly greater than the anode-cathode distance (Col. 7, Lines 1-23). This relationship would satisfy the limitation of $L < 3.37B^{-1}\sqrt{(V_A)} \times 10^{-6}$, wherein when combined with the apparatus of Bright et al., the Larmor radius is greater than the distance from the center of the filament to the wall.

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For the argument concerning Bright, the applicant argues that Bright does not overcome Maishev's deficiencies. Bright was not used to overcome Maishev's deficiencies. In the original rejection Maishev was used to modify Bright.

Drawings

Figure 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 rejected under 35 U.S.C. 103(a) as being unpatentable over Bright et al. (5,554,852) in view of Maishev et al. (6,037,717).

Regarding claims 1 -6, Bright et al. discloses in Figure 2 a Bernus ion source and method of operating said ion source comprising a plasma production vessel (110) which serves as an anode, a filament (116) provided on one side of the plasma production vessel, and a reflector (120) provided opposite said filament on the other side of the plasma production vessel which is

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kept at a filament potential (Col. 4, Lines 14-48). Bright et al. does not disclose a magnet within said vessel satisfying the relationship $L < 3.37B^{-1}\sqrt{(V_A) \times 10^{-6}}$. Maishev et al. discloses an ion source with a permanent magnet (166) located within a plasma production vessel (Col. 8, Lines 3-5). Maishev et al. discloses a plasma production that serves as a cathode (340) with an anode (354) inside (Col. 10, Lines 20-38). However, it would have been obvious to provide an anode housing with a cathode inside, since it has been held that the mere reversal of the essential working parts of a device involves only routine skill in the art. In re Einstein, 8USPQ 167. Maishev et al. further teaches of an ion source comprising a permanent magnet satisfying the relationship $L < 3.37B^{-1}\sqrt{(V_A) \times 10^{-6}}$ (Col. 6, Lines 40-43, 65-67 through Col. 7, Lines 1-9, Col. 13, Lines 16-18). According to the Applicant's specification, the expression $L < 3.37B^{-1}\sqrt{(V_A) \times 10^{-6}}$ can be written as $L < R$, where R is the Larmor radius (Page 6, Lines 7-9 of specification). Maishev et al. discloses in FIGS. 4a-4c an anode-cathode distance (d), between an anode (AN) and a cathode (IC, OC), wherein the Larmor radius (r_l) is significantly greater than the anode-cathode distance (Col. 7, Lines 1-23). This relationship would satisfy the limitation of $L < 3.37B^{-1}\sqrt{(V_A) \times 10^{-6}}$, wherein when combined with the apparatus of Bright et al., the Larmor radius is greater than the distance from the center of the filament to the wall. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the permanent magnet of Maishev et al., satisfying the relation of the Larmor radius being significantly greater than the anode-cathode distance ($r_l \gg d$), because Maishev et al. teaches that the use of the magnet induces a magnetic field in the ion emitting slit, while having virtually no effect on the ion trajectory (Col. 2, Line 66 through Col. 3, Line 5, Col. 7, Lines 1-23).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary A. El-Shammaa whose telephone number is 703.308.0851. The examiner can normally be reached on M-F (8:30am-5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on 703.308.4116. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9318 for regular communications and 703.872.9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.872.9317.

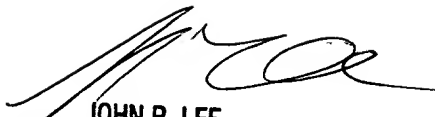
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April 24, 2003



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SUPERVISORY PATENT EXAMINER
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